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THE BATRACHIA AND REPTILIA OF THE UNIVERSITY OF PENNSYLVANIA
WEST INDIAN EXPEDITION OF 1890 AND 1891.

BY E. D. COPE.

The species enumerated or described in the following pages were collected in the course of a yachting expedition conducted by Professor J. T. Rothrock, at that time Professor of Botany in the University of Pennsylvania, among the northern islands of the West Indies. Collections were made at the following islands of the Bahama group: New Providence, Eleuthera, Watlings Island, Crooked Island, and Great Inagua. They next touched at the eastern point of Jamaica, at Port Morant, and later at Port Luce at the western extremity. The last collections were made at Grand Cayman Island. The zoologist of the expedition was Mr. J. Percy Moore, now Instructor in Comparative Anatomy and Zoology in the University of Pennsylvania. To his care we are indebted for an excellent series of the vertebrata of the islands visited. The collection of Batrachia and Reptilia enumerated in the following pages is one of the best ever made in the region. Collections from Crooked Island and Inagua are especially welcome as but little was previously known of their vertebrate fauna. Mr. Moore has furnished me with notes of his observations, which are added in their places, in quotation marks.

NEW PROVIDENCE.

Trachycephalus septentrionalis Tsch.

"This large tree toad was met with abundantly everywhere in the Bahamas and on Grand Cayman. About the sisal plantations on New Providence great numbers could be taken, one or more being concealed beneath the bases of the thick, fleshy leaves of almost every plant. Their cry, when taken in the hand, is very startling, having much of the force, quality, and pitch of the cry of a young infant. They are said to spawn in the wells."

Anolis principalis Linn.

Anolis sagræ D. & B.

"This is one of the most widely distributed and abundant of

Bahaman Anoles. The species is most characteristic of the more northerly islands; of those visited by us they are very abundant on New Providence, fairly swarming on Eleuthera, and less common on the islands south and east. We failed to find this species on Fortune Isl. and Great Inagua. They are equally at home on the ground and in trees, preferring to seek their food on the former. They are very pretty, when raised high on the fore-legs, with head elevated, and body in a quiver of excitement, they pause to detect the movement of an insect, upon which they spring with much agility, and devour in an instant. Their principal food is ants, which they seek along fences, by the roadside, among the trees, and in and about houses. Like the other Anoles they are fond of sunning themselves and lie on stones or fences with the legs stretched lazily along the sides of the body. On the island of Eleuthera, where they are known to the natives by the name of Iquana, they are fond of lying on the branches of bushes overhanging the fresh-water ponds. Outside of the Bahamas *A. sagræ* was met with in Jamaica, where they are particularly abundant on the north shore about Port Lucea."

Anolis distichus Cope.

"Common on New Providence, and less so on Eleuthera. Their habits in general resemble those of *A. sagræ*, but the species is especially common on the ground in banana and sisal plantations."

Anolis oligaspis sp. nov. Plate XI, fig. 5.

Tail little compressed at the base (mostly lost), and with a larger median dorsal row of scales. Scales minute, a few dorsal rows scarcely larger; ventrals much larger, smooth. Tibia about as long as head to posterior border of orbit. Occipital plate oval, larger than ear opening (transversely divided in the single specimen), separated from supraorbitals by one row of scales. The supraorbitals are in contact, and they are continued as a row of two large scales only between the anterior one which borders the orbit, and the scales of the canthus rostralis. The first pair of these two large scales is separated by a single row of small scales; the second is separated by three rows, of which the median is the largest, and continues to between the nares. Thus at the second large scales there are five rows of scales across the muzzle between the canthal scales, of which the lateral and median are larger than the other two. All scales of muzzle without keels; a shallow basin between large rows. Canthal

scales three. Supraoculars forming a disc of seven smooth scales, which is in contact throughout its inner border with the supraorbital series. Loreals in five rows.

The muzzle is rather short, and the extended hind limb reaches to the orbit. There are thirteen laminae beneath the second and third phalanges of the third and fourth toes.

The only specimen is a female, and it is greenish-gray with a brown band on each side of the vertebral line, which is similar in color to the sides. Throat with longitudinal series of blackish spots.

Length to vent, 44 mm.; do. to line of meatus auditorius, 14 mm. Length of fore limb, 19 mm.; do. of hind limb, 34 mm.; of hind foot, 14 mm.

This species is remarkable for the reduction in the number of its head scales. It resembles no other species nearly, unless it be the *Anolis krugii* Peters, of Porto Rico, which I have not seen. There are numerous discrepancies in the description of the latter. For instance, in *A. krugii*, the ventral scales are keeled, the superciliaries are separated by a row of scales; the supraorbitals are keeled; there are four enlarged dorsal rows, and the color is quite different.

Amiva thoracica Cope.

"A common and conspicuous species, especially in the northernmost of the Bahama Islands. Like its allies this is essentially a ground inhabiting species, living among the loose coral boulders, in the crevices of which secure shelter and concealment may be found. They love to lie on stones basking in the warm sunshine, but are ever alert and dart away like a flash, their course being indicated by a blue streak. They are extremely difficult to catch, and although very abundant on Cat Isl., and almost equally so on Eleuthera, only a very few specimens were taken."

Ungualia maculata D. & B.

Alsophis vudii Cope.

CAT ISLAND.

Alsophis vudii Cope. Port Howe.

ELEUTHERA.

Anolis principalis L. Tarpum Bay.

"A most beautiful species of essentially arboreal habits. Widely distributed, but apparently not very common anywhere. They are found among the smaller trees and bushes, leaping actively about

and performing many interesting acrobatic feats in pursuit of insects. New Providence, Governors Harbour, and Tarpum Bay, Eleuthera, Port Howe, Cat Isl., French Wells, Crooked Isl., and Fortune Isl."

Anolis sagræ D. & B. Tarpum Bay.

Ungualia maculata D. & B. Tarpum Bay.

"This species is common throughout the Bahamas visited by our party, but the *U. cana* was found only on Great Inagua. The species have similar habits. They are found during the day coiled up under stones in the driest, hottest places with such incompatible company as centipedes, scorpions, and tarantulas, for they are very mild tempered little snakes."

CROOKED ISLAND.

Anolis principalis brunneus subsp. nov. Plate X, fig. 3.

This form is allied to *A. principalis*. It has the same shaped head, and the same squamation of the body, with similar proportions of limbs. It falls outside the usual range of variation of *A. principalis* in some points of squamation of the head, and in the color. Thus the supraorbital rows of scales are continued forward, to between the nostrils, not reaching the canthus rostralis, and are in contact throughout, except an occasional separation by a single scale. Thus there are but 4-5 rows across the front instead of 7-8 in *principalis*. There are but three loreal rows, the middle one consisting of but one or two scales, while there are 5-7 in the *A. principalis*. The six or seven supraocular plates are of subequal size and are obscurely keeled, and are in immediate contact with the supraorbitals; in *A. principalis* they are of unequal size and are separated from the supraorbitals by a series of small scales. On the inferior side of the second and third phalanges of the fourth digit of the posterior foot there are 18, 20 lamellæ, in the *A. principalis* there are 24.

The color is different from that of any stage or variety of the *A. principalis*. Above and on the sides leather-brown. On each side two dark brown stripes, the superior the wider, and sending cross processes towards the middle line of the back. Posteriorly it is broken up into a series of dark brown spots which become wider, and finally unite in crossbars on the tail. Below light yellowish, the throat indistinctly lined with darker.

Total length, 123 mm.; do. to vent, 43 mm.; to line of auricular meati, 14 mm.; of fore limb, 15 mm.; of hind limb, 27 mm.; of hind foot, 12 mm.

Liocephalus carinatus Gray.

Scales in 46 rows; 5-6 supraoculars; 3 introfrontonasal scales.

"Generally distributed throughout the Bahamas; this species is especially abundant on Crooked Isl., where Anoles are comparatively uncommon. The larger vegetation is very sparse here and loose piles of coral rock near the shores are overgrown by a comparatively open bush or scrub. It is here that the species abounds, scurrying about on the ground and only rarely climbing into bushes. They are very inquisitive creatures and come close up to look at one, then running back a yard or two, pause again, and raising themselves on the fore-legs, look about with elevated heads, a strange admixture of curiosity and timidity, ready to run again at the slightest alarm. While in running the Anoles only slightly raise the tail from the ground, and the Ameivæ drag it straight out behind, this species elevates the tail high over the back, where it forms, pig-like, a spiral coil, which peculiarity has gained for them the name of curl-tail lizards. This species hides among the rock crevices, and large numbers take advantage of the burrows of the land crab (*Gecarcinus*) as places of concealment. Though active, they are easily caught in the hand, or by means of a grass noose. Their tails part very readily and one is frequently rewarded for his pains with only that squirming member. Highly carnivorous and very voracious they apparently do not pause even at cannibalism, as was illustrated once when a detached tail fell from my hand to the ground, where its movements attracted the attention of an individual of the same species, which ran down from the rocks fully twenty-five feet away, picked up the tail and bore it off. A few minutes later it was seen with the tip of the still squirming tail of its neighbor hanging from between its teeth. On another occasion a warbler which was shot and had fallen to the ground, was found guarded by a large curl-tail which seemed about to attack it."

GREAT INAGUA.

Anolis moorei sp. nov. Plate XI, fig. 4.

Characters those of a prevalent West Indian type, *i.e.*, tail compressed and with a larger median superior row of scales, and ab-

dominal scales smooth. The affinities are with the *A. cybotes* Cope, of San Domingo, but the scales of the sides and most of the back are twice as large, and the median dorsal rows are not abruptly larger than those adjoining. Frontal ridges low, and median basin shallow. Tibia shorter than length from muzzle to ear. Scales of muzzle moderate, smooth. Superciliary rows separated by one row of scales except for a short distance, where they are in contact. Supraoculars 13-15, smooth, those of internal and adjacent rows subequal, the whole separated from the supraorbitals by small scales of different sizes. Occipital plate equal auricular meatus, separated from supraorbitals by three rows. Five loreal rows; four canthal scales, the latter connected with anterior supraorbital by two rather large scales, which are separated by four rows of scales. In front of the basin there are nine rows of scales counting across the muzzle, of which the median row is much enlarged. In *A. cybotes* there are but two or three rows in the frontal basin, and the middle row on the muzzle is not enlarged. Twenty-four lamellæ under the second and third phalanges of posterior fourth toe. Fan of male reaching to between humeri. Male with postanal plates rudimental.

Color ashen, thickly mottled with small, black spots on the sides and back, and upper surfaces of limbs. Spots smaller on nape. A black band from nostril through lower eyelid to ear. Fan greenish-black in alcohol. In a smaller specimen, perhaps a female, as the fan is small, there is a dark band across the supraoculars, and the occiput is reticulated with black. The median dorsal region is covered by a dark brown band.

Total length of male, 195 mm.; do. of head to ear, 10 mm.; do. to vent, 72 mm.; do. of fore limb, 31 mm.; do. of hind limb, 55 mm.; of hind foot, 23 mm.

This species differs from its nearest ally, the *A. cybotes*, in the larger scales, the different arrangement of the muzzle plates, the more numerous supraorbitals, and mostly widely in the coloration. In size it exceeds that species. It is dedicated to my friend Mr. J. Percy Moore, Instructor in Zoology and Comparative Anatomy in the University of Pennsylvania, who captured the type specimens.

“This handsome species was found only on Great Inagua where it is quite common. They are distinguishable at sight, during life, from any species met with elsewhere by their comparatively large size and pale gray-brown spotted color, which on occasion changes to

a more or less intense brown. Though very active in their movements they are readily approached and captured, but have an uncomfortable habit of seeking shelter among the thick clumps of a very spiny *Agave*."

Anolis cinnamomeus sp. nov. Plate XII, fig. 6.

Tail compressed, with enlarged median dorsal row; ventral scales keeled. A few keeled median dorsal rows nearly equal to ventrals, but soon graduating into the smaller laterals. Caudal scales keeled. Tibia shorter than head to ear; extended hind leg reaching to eye. Fifteen laminae on second and third joints of posterior fourth toe. Occipital plate equal to auricular meatus, and separated from supraorbitals by three rows of scales. Supraorbitals in contact with each other, the anterior separated from the canthal row by two large scales. Between the latter is a shallow basin containing two series of scales. Three canthal scales. Between them on the front part of the muzzle may be counted seven scales, of which the median is large, being one of a median longitudinal row. Scales of muzzle smooth. Supraocular few, only six large ones and a few small ones at their external border; not, or faintly keeled, and separated from the supraorbitals by a single row of small scales. Five and four rows of loreal scales. The muzzle is of intermediate length.

Color above brown; sides pale brown; inferior surfaces pale. Back, sides and throat speckled with rather coarse black dots, which are on the back rather frequently fused into short lines both longitudinal and transverse. A black spot on the loreal region; the lower eyelid dark. Top of muzzle in front of orbits pale.

Length from muzzle to vent, 45 mm.; to posterior line of ears, 13 mm.; of fore limb, 19 mm.; of hind limb, 24 mm.; of hind foot, 15 mm.

This rather small species is allied to the *A. cybotes* and the *A. moorei*. It agrees with the latter in the character of its scales, but differs from both in the small number of both the supraocular plates, and the subdigital lamellae, and in the contact of the supraorbital plates, and the reduced number of the scales on the muzzle. It is darker colored than the *A. moorei*, but is similarly speckled with black.

Two specimens were collected by Mr. Moore, which from the small size of their fans I suspect to be females.

***Liocephalus* sp.**

“A distinct *Liocephalus*, probably *L. schreibersii* Gray, was plentiful on Great Inagua, but the specimens have been mislaid. It is a rather smaller, more active species which carries the tail elevated but not curled.”

***Ungualia cana* Cope.**

On comparison of this species with others of the genus I have occasion to reassert the distinctness of the *U. hetiana* Cope from the *U. maculata* with which it is united by Boulenger in the Catalogue of Snakes in the British Museum, Vol. I. In the original description (Proceed. Amer. Philos. Soc., 1879, p. 273), the statement is made that the scales are in twenty-seven longitudinal rows, which they are at some points; but at the stoutest part of the body they are in twenty-nine rows. In *U. maculata* they never exceed 25 rows, and are usually 23. There are no interparietal plates; these are always present in the *U. maculata*.

In the genus *Ungualia* the anal claws are of irregular occurrence. In seven specimens before me they are present in only three. The same is true of the genus *Charina*, also usually regarded as peropodous. In two specimens before me they are wanting.

***Amiva leucomelas* sp. nov. Plate XII, fig. 8.**

Ten rows of abdominal scales. Caudal scales oblique, diverging backward and outward on each side of the median series, keeled, the keels parallel to the middle line. Nostril within the border of the internasal plate. Nasal triangular, small; one very large loreal plate; one preocular plate descending to the fourth superior labial; four suborbitals in contact with the labials except the fourth. Six narrow superciliaries; four supraorbitals; frontal not transversely divided. Two parietals on each side of the interparietal, which they do not quite equal in length, while each is about equal in size to the rather elongate interparietal. Two rows of small, smooth postparietals. Gular scales nearly uniform; some larger ones at the middle of the mesopterygium. Dorsal scales coarsely granular, round.

Three rows of plates on the forearm, the external much the widest; one row on the humerus with a much smaller row on each side of it; the former not continuous with the large row of the forearm. Three large and a few small preanal plates, which are continuous with the

abdominals. Femoral pores thirteen. Thirty-four transverse rows on the abdomen.

Median dorsal region brown, becoming blackish and then black anteriorly, the lateral border pale brown posteriorly, but becoming white anteriorly. A broad, black lateral band from orbit to above femur, bounded below by a narrow white stripe. Head brown on sides and above; limbs lead colored above. Inferior surfaces bluish-white; tail with the scales darker at the base than elsewhere. Near the base of the tail the darker color is leaden, but at the middle and beyond it passes to bluish and blue; and the pale portion varies in a corresponding way to pale blue. No black lines on posterior face of femur.

Length to vent, 57 mm.; do. of fore limb from axilla, 16 mm.; do. of hind limb, 35 mm.; of hind foot, 21 mm.

This very handsome species is allied to the *A. polops* Cope of St. Croix, but differs in several respects. The median dorsal scales are not enlarged, as in that species, and there are five fewer femoral pores, and the lateral caudal scales are keeled, not smooth. The coloring is quite different. In the *A. polops* the dorsal region is olive-gray, and there are three white longitudinal lines on each side and a pair of black lines on the posterior face of the femur.

"This handsome species was found only on Great Inagua where they occur very commonly. The colors are very bright during life and this fact, as well as their activity, makes them very pretty objects to watch. Much smaller than *Ameiva thoracica*, which was not found on Inagua, and perhaps even more active, they are extremely difficult to catch, and specimens were only secured by recourse to the shot-gun. They frequent the paths and roadsides and the rocks about the shores."

JAMAICA.

Bufo agua Daud.

"This great toad is very common in the meadows along the streams about Lucea, Jamaica, where they are called frogs. Quite nocturnal in habit they spend the day in burrows beneath stones and rubbish, and at night come forth to splash through the water and rank grass along the shores of streams. When the light from a bulls-eye lantern is flashed on them they crouch and attempt to conceal themselves. In the water they are quite at home and swim easily, but on land progress in a very lumbering way, the legs seeming too weak

to propel the heavy body. Young ones were found concealed under rubbish."

Hylodes martinicensis D. & B.

Port Lucea and Blue Peak.

Lithodytes lentus Cope.

A single example of this handsome black and orange tree-toad was taken at Port Lucea clinging to a shrub overhanging a stream.

Xiphocercus valenciennei D. & B.

Port Morant.

"This fine species was rarely met with and was collected only at Port Morant and Port Antonio, Jamaica. At the former place lizards of all kinds are uncommon owing to the abundance of the mongoose, which animal has exerted a marked influence on the reptilian fauna of Jamaica. Snakes of all kinds have been exterminated so completely that we failed to find a single specimen. The same is true of the larger ground-inhabiting lizards.

The present species lives on and about the trunks of cocoanut trees."

Anolis grahamii Gray.

Port Morant; Port Antonio; Port Lucea.

"Notwithstanding the mongoose, this species is generally abundant about the coast of Jamaica, and on Grand Cayman, though noticeably more so in thickly settled districts, where they are familiarly known as the clucking lizards, and welcomed into houses, over the walls and ceilings of which they run with apparent ease. Their habits were studied about Kingston and elsewhere. At midday in the hot sunshine along fences they are seen at their best. They extend and retract the brilliant scarlet goitre in a regular rhythmical way as a flattened fold, the body meantime passing through a remarkable series of color transitions from rich brown or almost a chocolate color, through pale browns, grays, dull greens to bright blue-greens, some individuals retaining more of one color, some more of another, sometimes plain, sometimes spotted, until one almost wearies in counting the variations and changes. The colors are more or less related at any moment to the colors of surrounding objects. This is a very active lizard which runs with great swiftness along the fences and branches of trees, often taking flying sidelong leaps of surprising length, but clinging surely by means of the adhesive disks, by which they are enabled to cling

even to such smooth surfaces as window panes. At Port Morant they were especially abundant in the cocoanut groves concealing themselves, when alarmed, beneath the matting which envelops the bases of the leaf petioles. Their food, in the vicinity of Kingston, is largely ants and wood ticks."

Anolis flabellatus sp. nov. Plate XII, fig. 7.

Allied to *A. grahamii* but with the abdominal scales smooth, the supraorbital scales continued as a distinct series of larger scales to the canthus rostralis; the scales of the muzzle not keeled. The occipital scale is about as large as the auditory meatus, and it is separated from the supraorbitals by one or two rows of scales instead of four or five as in the *A. grahamii*. Supraorbitals separated by one row of scales; supraorbitals, 13-14 keeled, and of various sizes, becoming smaller externally. The frontal ridges are not elevated as in the *A. lineatopus* Gray, but the front is flat, nearly as in *A. grahamii*. Three scales separate the anterior supraorbital from the canthus rostralis, which itself is marked by five scales. Seven rows on the muzzle between the canthus; ten rows in the *A. grahamii*. Twenty-one lamellæ under third and fourth phalanges of posterior fourth toe. The tibia is shorter than from the muzzle to the ear, and the extended hind foot reaches to the eye. The dorsal and lateral scales are of equal size. The fan is large, extending posterior to the axillæ in males.

Color above brown, lighter on the sides, and marbled on both regions with darker brown. Below pale with darker reticulations on the chin. Color of fan not dark.

Length to vent, 46 mm.; to ear, 13.5; do. of fore limb, 21 mm.; of hind limb, 36 mm.; of hind foot, 15 mm.

This species need only be compared with the *A. grahamii*, to which it is allied. Besides the characters mentioned, it is smaller, and is of a different color; the *A. grahamii* being more or less green, and not tending to brown. It resembles more strongly the *A. grahamii conspersus* of Garman, which is rather intermediate between the *A. flabellatus* and the *A. grahamii*. The *A. g. conspersus* is as large as the latter, and is peculiar in coloration.

From Port Morant and Port Lucea; abundant.

"A slender, pretty species found on the north shore of Jamaica at Port Antonio and Port Lucea. It is not very common, and is found

chiefly among the dense masses of aerial roots which hang from the trunks and branches of the Indian fig (*Ficus indica*), where it drives the would-be collector almost to distraction by quietly slipping into an ever present crevice just as his hand descends on the spot where, in his mental image, it still rests. Its slender form and brown color admirably fit it to its habitat. This species was also found just within the entrance of a cave at Port Antonio."

Anolis sagræ D. & B.

Port Lucea.

Aristelliger præsignis Hallow.

Port Morant.

A small gecko, perhaps the young of this species, was taken by Mr. Moore at Port Morant, about January 12, 1891. Its colors are much more elegant than those of any specimen either adult or young which I have seen, but the scale characters are the same. The color is light fawn, darker on the head; a dark band through the eye; lips whitish spotted. A black scapular spot with a small, yellow center on each side; behind it a delicate vertical yellow line. Narrow vertical yellow lines on the sides, and indistinct brownish dorsal cross-bars behind the middle of the length. Length of head and body 27 mm.

Sphærodactylus goniorhynchus sp. nov.

Lateral and anterior surfaces of rostral plate separated from superior surface by a curved, solid right angle, which is not continued posteriorly. Dorsal scales about equal to ventrals, acute, imbricate, keeled. Scales of top of head similar but smaller. Ventral and pectoral scales similar to dorsal, keeled. Tail covered everywhere with similar scales, whose free apices give it a chaffy appearance. Eyelid covered from middle of front to superior posterior border with large, chaffy scales which are larger than those on the front. Upper part of rostral plate split. Labials $\frac{4}{4}$. Muzzle short, its length from orbit equaling from orbit to auricular meatus.

Color dark marone above, below light reddish-brown, the colors blending on the sides of the body, but separated by a sharp undulating line on each side of the tail. An indistinct, undulating pale line extends from the neck on each side of the back and dorsal surface of the tail, which sends short processes inward, especially on the tail. This line is only clearly seen in the dead animal when it

is in spirits. Gular region paler, uniform. Total length, 43 mm.; length of body and head, 23 mm.

This species is well distinguished by the form of the end of the muzzle, and by the keeled ventral scales. The superciliary scales are also entirely peculiar, as they present several free points upwards and backwards, in place of the spine-like process found in the other species. Port Antonio.

GRAND CAYMAN.

Trachycephalus septentrionalis Tsch.

Anolis grahamii conspersus Garman.

"Very common on Grand Cayman, where they occur in great numbers about the gardens and banana orchards."

Liocephalus varius Garman.

"Found only on Grand Cayman, where it is common among stones by the roadside, and in stone walls. Habits similar to *L. carinatus*."

Aristelliger præsignis Hallow.

"Only one specimen taken on Grand Cayman. It clung so firmly to the tree trunk on which it rested that much of the skin of the bark was torn away in removing it. The habits of this gecko are similar to those described for its allies; while its sluggishness and stupidity distinguish it sharply from the other lizards here described."

Alsophis angulifer caymanus Garman.

"This snake is very common on Grand Cayman, and I recall one stone wall by the roadside that was fairly alive with them. On the top stones many were lying warming in the sunshine, while from crevices everywhere heads protruded. Their movements and general actions resemble what is most familiar in our garter snakes."

EXPLANATION OF PLATES X, XI, AND XII.

PLATE X.

Fig. 1. *Holarchus dolleyanus* Cope, about 1.5 natural size.

Fig. 2. *Trimerodytes balteatus* Cope, about 2.5 nat. size.

Fig. 3. *Anolis principalis brunneus* Cope, about 2.5 nat. size.

PLATE XI.

Fig. 4. *Anolis moorei* Cope, about 2.5 nat. size.

Fig. 5. *Anolis oligaspis* Cope, about 2.5 nat. size.

PLATE XII.

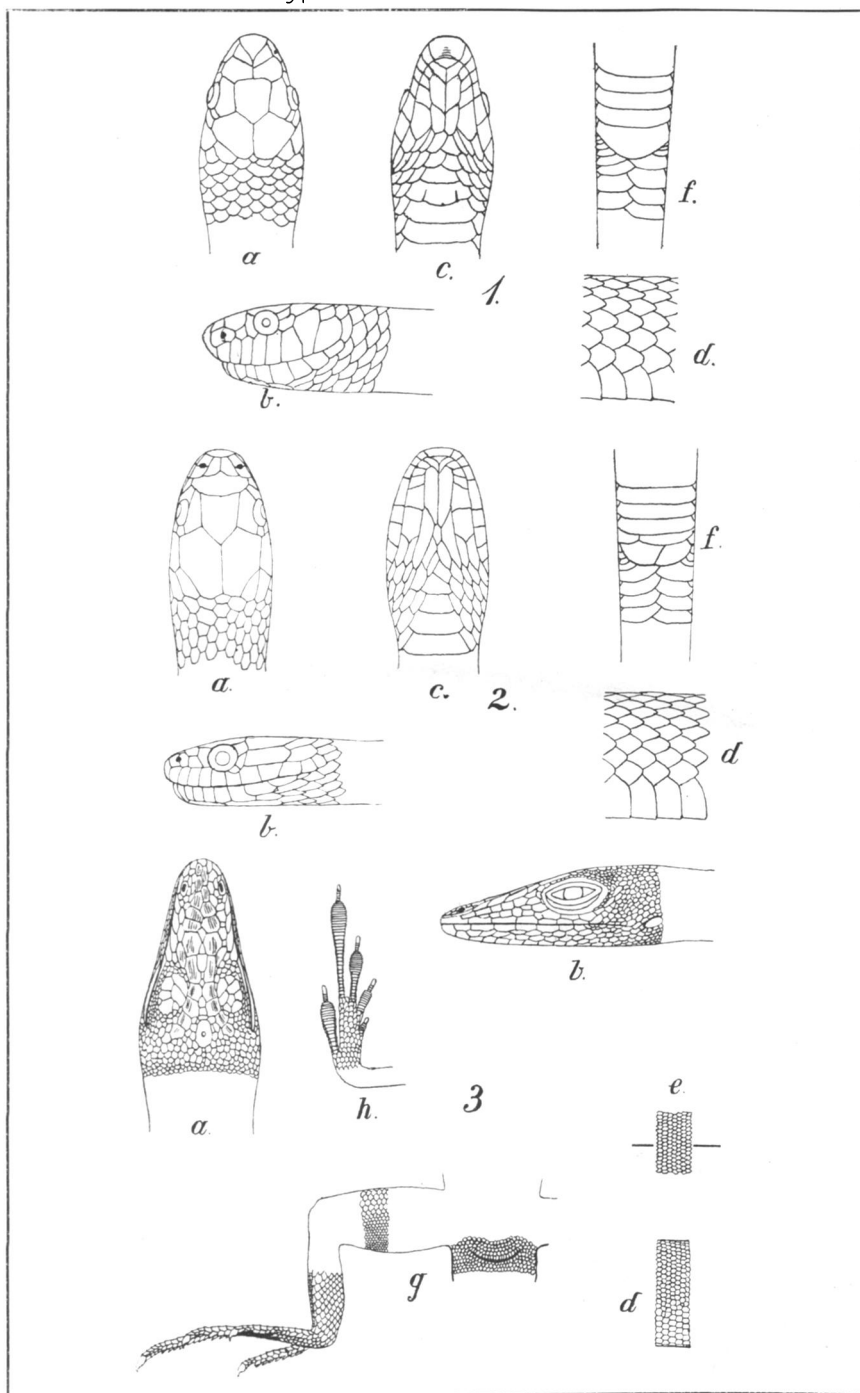
Fig. 6. *Anolis cinnamomeus* Cope, about 2.5 natural size.

Fig. 7. *Anolis flabellatus* Cope, about 2.5 nat. size.

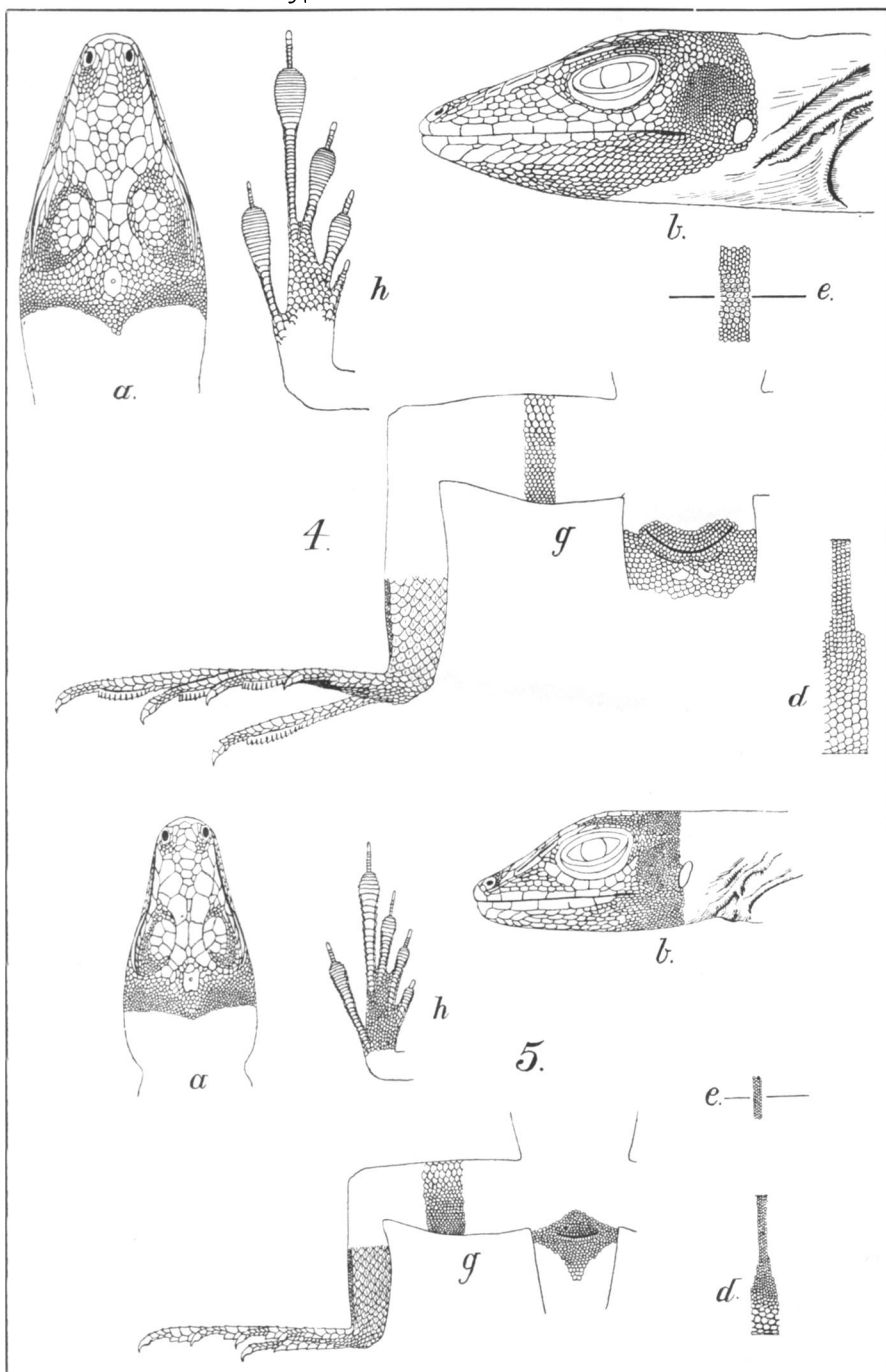
Fig. 8. *Amiva leucomelas* Cope, about 2.5 nat. size.

LETTERING.

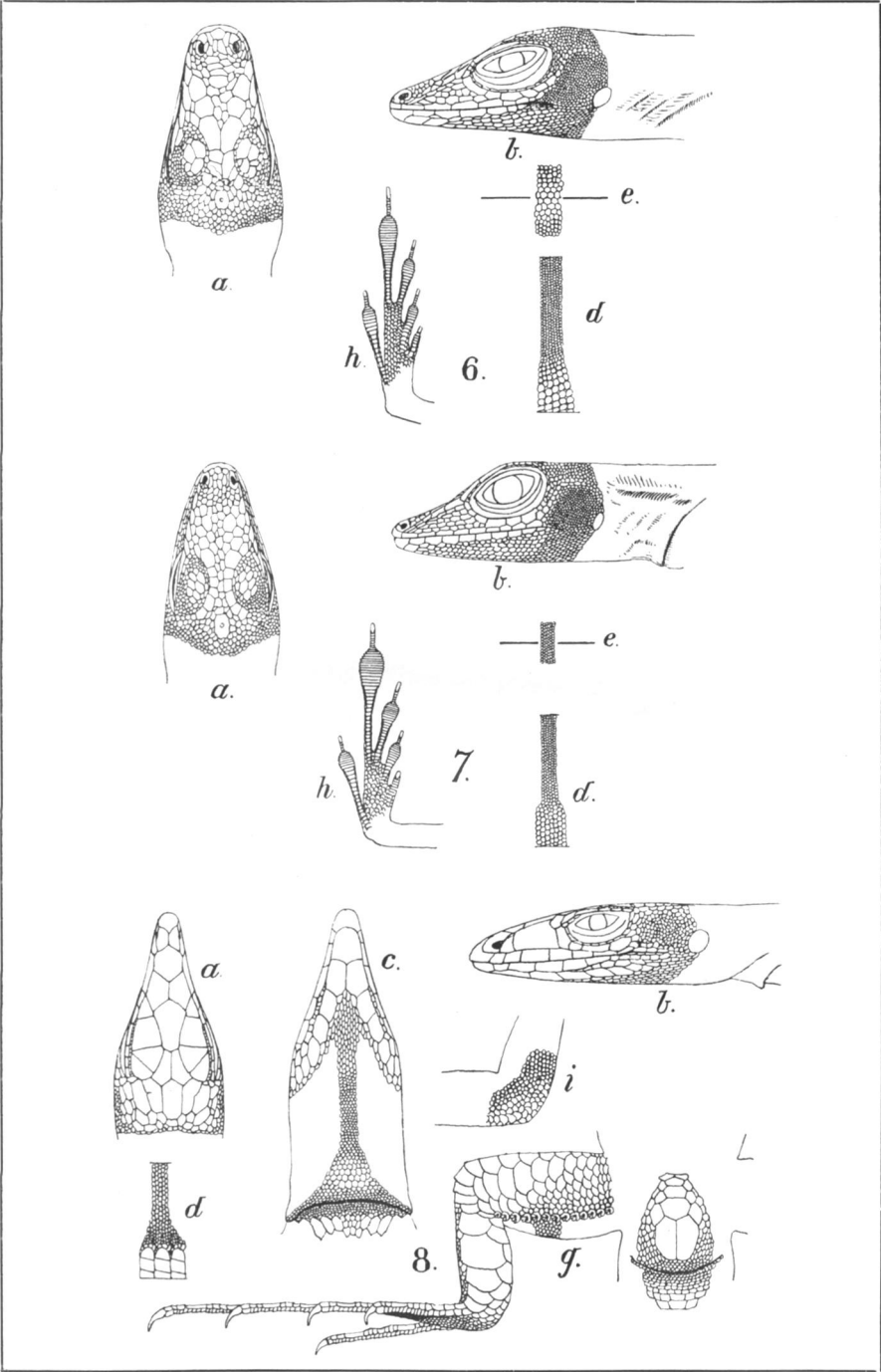
a, Head, from above; *b*, do. side; *c*, do. below; *d*, scales, from the side; *e*, median dorsal scales; *f*, anal region; *g*, hind leg and anal region; *h*, posterior foot from below.



COPE, BATRACHIA AND REPTILIA.



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